SiC News

SiC manufacturers benefit from funding

US manufacturers of SiC substrates are benefiting from government funding as the nation's Department of Defence (DoD) look to improve manufacturing capability for the material.

Sterling Semiconductor (Sterling, VA) has been awarded a US$3.0 million contract by the DoD under the Title III of the Defense Production Act. Sterling is the prime contractor of a project that will also involve ATMI (Danbury, CT) and General Electric. Researchers at New York State University at Stony Brook and Carnegie Mellon University will also participate in the programme. The programme will focus on three major tasks - growth of larger diameter wafers, cost reduction, and elimination of defects.

Similarly, Litton Airton (Morris Plains, NJ), is being awarded $3.5 million in US government funding to develop a domestic merchant manufacturing capability for large diameter electronic-grade SiC substrates.

And another Title III contract has been awarded to Cree Research (Durham, NC), who will receive $2 million in funding through to August 2001. The primary focus of its project is on quality improvement and cost reduction of production quantities of 3", as well as the development of 4", SiC substrates.

Cree has also received funding from the Office of Naval Research (ONR) and the Air Force Research Laboratories (AFRL) totaling $5.3 million for the development of wide bandgap microwave and power switching devices. Of these awards, $3.5 million is directed towards the development of component technologies to enable future generation Advanced Multifunctional Radio Frequency Systems (AMRFS). AFRL has funded an additional award focused on high power GaN microwave devices for airborne radar and space-based military systems, as well as a variety of commercial applications.

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MBE News

TRW boosts GaAs capacity by 50%

TRW has installed the compound semiconductor industry's first Riber 6000 MBE system at its fab in Redondo Beach, CA, USA. The company says the high-volume machine increases its GaAs MBE wafer processing capacity by 50%, giving it the industry's largest MBE production capability.

Abdullah Cavus, the TRW engineer responsible for bringing the new system on line, says at full production rates the fully automated system will process more than twice the number of 4" GaAs wafers per day possible with current MBE systems. With 11 materials ports surrounding a large vacuum chamber where the epitaxial layers are grown, the new machine dwarfs earlier MBE systems. The amounts of Ga, As, Al, and other materials placed in the effusion cells are measured in kilograms rather than the grams of earlier machines.

In early August TRW completed growth of the first epitaxial layers on a lot of wafers to produce HBT circuits and began six weeks of limited production later in the month. "Wafers from that limited production will undergo reliability testing as we fine tune our processes with the new machine," Cavus says.

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